

Code of practice for

Pipelines —

Part 2: Pipelines on land: design,
construction and installation —

Section 2.3 Asbestos cement

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- British Gas plc
- British Plastics Federation
- British Precast Concrete Federation Ltd.
- Concrete Pipe Association
- Country Landowners' Association
- County Surveyors' Society
- Department of Energy (Petroleum Engineering Division)
- Ductile Iron Producers' Association
- Electricity Supply Industry in England and Wales
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- National Farmers' Union
- Pipeline Industries Guild
- Royal Institution of Chartered Surveyors
- Society of British Gas Industries
- Water Authorities' Association
- Water Companies' Association
- Water Research Centre

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Fibre Cement Manufacturers' Association Limited

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Foreword

This Section of BS 8010 has been prepared under the direction of the Civil Engineering and Building Structures Standards Committee. The standard is being published in four Parts to form a complete revision of all five Parts of CP 2010 as follows:

- *Part 1: Pipelines on land: general;*
- *Part 2: Pipelines on land: design, construction and installation;*
- *Part 3: Pipelines subsea: design, construction and installation;*
- *Part 4: Pipelines on land and subsea: operation and maintenance.*

The new Part 1 (which supersedes CP 2010-1:1966) is intended to contain general information which is relevant to a variety of pipeline construction materials and a variety of transported materials. It deals with those aspects of pipeline development which affect the owner and occupier of land through which the pipeline passes.

Part 2 will be divided into several Sections which will be published as separate documents as follows:

- *Section 2.1: Ductile iron;*
- *Section 2.2: Steel (for water and associated products);*
- *Section 2.3: Asbestos cement;*
- *Section 2.4: Prestressed concrete;*
- *Section 2.5: Glass reinforced thermosetting plastics;*
- *Section 2.6: Thermoplastics;*
- *Section 2.7: Precast concrete;*
- *Section 2.8: Steel (for oil, gas and associated products).*

Each Section will contain information on the design, construction and installation of a pipeline in the particular material. These Sections will supersede the existing Parts 2, 3, 4 and 5 of CP 2010.

Part 3 will include information relevant to the design, installation and commissioning of subsea pipelines in steel and other materials.

Part 4 will contain advice on the operation and maintenance of pipelines and will probably be in sections related to conveyed material.

This Section 2.3 supersedes CP 2010-4:1972, which is withdrawn.

Appendix A describes and illustrates some typical types of joint used with asbestos cement pipe.

Appendix B gives the requirements for materials for use with potable water.

Appendix C contains the references for additional detailed information.

References are indicated in the text by numbers in square brackets.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

Attention is drawn to the following principal Statutes. This list is not intended to be complete and the relevant authorities should be consulted and reference made to Part 1. These Acts are supplemented by Statutory Instruments.

- Acquisition of Land Act 1981
- Control of Pollution Act 1974
- Countryside Act 1968
- Pipelines Act 1962
- Public Health Acts 1936 and 1961
- Requisitioned Land and War Works Act 1948
- Water Acts 1945, 1948, 1973, 1975, 1981 and 1983.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Subsection 1. General

1 Scope

This Section of BS 8010 gives design considerations and construction and installation recommendations for asbestos cement pipelines and should be read in conjunction with BS 8010-1*.

This British Standard code of practice is not intended to replace or duplicate hydraulic, mechanical or structural design manuals.

2 Definition

For the purposes of this Section of BS 8010 the following definition applies.

pipeline

a line of pipes, of any length, without frequent branches. It does not include piping systems such as process plant piping within refineries, factories or treatment plant

3 Application

The pipelines covered by this Section of BS 8010 are generally suitable for conveying natural or potable water, slurries and sludges, sewage, trade waste and brine. When designing for the conveyance of sewage, reference should also be made to BS 8005.

4 Health and Safety

The inhalation of asbestos dust can lead to asbestosis, lung cancer and mesothelioma. There is no completely safe level of exposure to asbestos dust, but the risk of disease increases with increasing exposure. Occupational exposure to asbestos dust should therefore be kept to a minimum and in any event should not exceed current control limits published by the Health and Safety Executive [1].

Asbestos cement pipes made in the UK since 1982 contain only chrysotile (white asbestos). Pressure pipes made in the UK between 1955 and 1964 and sewer pipes made in the UK between 1967 and 1970 contain some crocidolite (blue asbestos) in addition to chrysotile. Amosite (brown asbestos) replaced crocidolite in much UK manufacture of pressure pipes between 1970 and 1982, although the asbestos content of the pipes was predominantly chrysotile. The Asbestos (Prohibitions)

Regulations 1985 prohibit the supply of materials and articles containing crocidolite and amosite, or the use at work of such products except those which were in use before 1 January 1986, but do not prohibit removal or disposal. Crocidolite and amosite and products containing either of them may not be used in the manufacture or repair of any other product.

NOTE The production of asbestos cement pipes in the UK ceased in 1986.

The Asbestos Regulations 1969 require that HM Factory Inspectorate be given twenty-eight days notice before work is started on any process (which includes cutting and turning) involving crocidolite in a factory (which includes water treatment works). The 1969 Regulations are due to be replaced by the Control of Asbestos at Work Regulations, currently being prepared.

The precautions to be taken when working with asbestos cement are described in HSE Guidance Notes [2] [3] [4]. Work methods should be selected which effectively prevent the spread of asbestos contamination and do not create unnecessary dust. Asbestos cement pipes should be thoroughly wetted, wherever reasonably practicable, before cutting, rasping or machining operations.

Water-flushed rotary abrasive discs are permissible for cutting pipes provided that those involved in the operation wear suitable respiratory protective equipment and impervious protective clothing (see BS 4275), [5] [6]. Other types of high-speed rotary tools should not be used. Hand saws and low speed turning and parting lathes are permissible.

Arrangements should be made for decontamination of personnel and equipment. Waste material such as off-cuts, turnings and dust containing asbestos should be disposed of in accordance with current regulations on hazardous waste. It may be necessary to place the material in impervious bags or air-tight containers, appropriately labelled, for disposal as asbestos waste.

The recommendations in this Section which relate to the integrity of pipelines have regard to the need for public safety under conditions usually encountered by asbestos cement pipelines in urban, rural and industrial areas.

5 Inspection

The integrity of a well-designed pipeline depends to a great extent upon the performance standards set for each stage of manufacture and construction, and the quality of inspection by which the achievement of those standards is controlled. The promoter of a pipeline should carefully evaluate what degree and balance of inspection, as between the manufacturer and constructor on the one hand, and the promoter and his agents on the other, will most efficiently achieve the overall level of assurance required.

The purchaser's rights of inspection of pipes and components at the factory, including some optional rights, are covered in the relevant British Standards.

Special attention should be paid to:

- a) inspection before installation for possible damage particularly to the ends of each pipe and any coating (see clause **25**);
- b) proper bedding to ensure that the design criteria for superimposed loading are met and that leakage is not caused by undue settlement;
- c) proper jointing, anchoring and testing.

Any substandard materials or workmanship detected should be rectified or, where necessary, rejected before any further work is done.